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The bacteria showed the following peculiarities:—

1. In fresh cases the bacteria are found in large masses in the mucus, that is, in the inner of the leucocytes; they form a thick layer on the surface of the inflamed mucous membrane, and press into the superficial lymph-spaces and often also into the inner organs.

2. They form very fine, generally pointed, diplobacteria, or short rods, with a diameter of 0.2μ , often making chains. One recognizes in the inner of the same chromatic granules; these appear to be surrounded by a light zone, and they are without motion. With aniline colors they stain feebly, in single cases better, and are faint, or do not stain at all (except the chromatic granules), with Gram's method. In older cases and cultures, as in the inner of the leucocytes, the bacterium is found in a state of granular disintegration, frequently lessened in size or swollen so that the thickness of the individual bacteria can vary between 0.1 and 0.3μ . The thickness also varies according to the coloring matter employed.

3. The bacteria can be cultivated in many cases, especially in glycerine. There are formed here, especially deep in the nutrient medium, very small rod-like colonies.

4. The bacterium is pathological for rabbits, since in some cases its introduction into healthy nasal cavities causes a sort of sepsis, pneumonia, and death of the animal.

From Babes's investigations it appears that white mice are not always immune against greater quantities of the culture or the products of the disease, and that they can die.

As there is now no special difficulty in recognizing and cultivating the very small bacteria in cover-glass preparations, it is to be hoped that they may be made valuable in diagnosis, and that a way for preventing and subduing the disease may be experimentally investigated.

Georgetown Medical School.

A. MACDONALD.

LETTERS TO THE EDITOR.

Making an Herbarium or Preserving Plants.

THIS is the time of year when botanists are making plans for the summer campaign. I am not going through the subject by going into details, as *Science* has recently noticed several small manuals which treat fully of the subject. I wish to emphasize a few points which have received too little attention. I am somewhat familiar with the collecting done by the older botanists of this country, and with some in other countries.

We have a great advantage in many ways over the older collectors. We are learning all the time from each other. We are going deeper and deeper into the study of plants.

Almost everyone who preserves specimens, on the start hoards up a lot of worthless trash—of snips, tops, and mere fragments. Don't do it, but study the subject well from every side. I speak now more particularly with reference to grasses; but the following statement, I feel sure, will apply with almost equal force to most families of plants. This is the statement which I believe to be true, with very few exceptions:—

All truly good herbarium specimens have been made within the past twenty years, and a very large proportion of those prepared during the last twenty years are far from good. It is no injustice to others to say that, so far as I know, C. G. Pringle of Vermont, by his fastidiousness in this matter, started a reform which seems to be rapidly spreading. We should have an abundance of material, lower leaves, flowers, fruit, and root-stalks, if there are any, and little packages of nuts, flowers, and seeds on the sheet for study. Some years ago I spoke of the importance of preserving seedlings of many of our plants. This is a good time to refer to this part of the subject, since Mrs. Kellerman has illustrated the seedling blackberry. Turn to page ninety-four and study it. Go to raising seedlings, or pick them up wherever they can be found. Look out, too, for buds of trees and shrubs, and collect

them before the inner scales have fallen—as they are opening. Do not be satisfied with mediocrity, but strive to have everything neat and complete.

W. J. BEAL.

Agricultural College, Ingham Co., Mich., Feb. 22.

The Barn Owl a Winter Resident in Ohio.

THAT the barn owl, *Strix pratincola*, is, at least, a rare winter resident of central Ohio can no longer be questioned. A few days since two individuals were found in the hollow trunk of a sycamore tree at Utica, Licking County. One of them was killed by the fall of the tree; this I have not seen. The other was taken alive, and I had the satisfaction of seeing it last week in the possession of Mr. Newkirk of Newark, O. There is no doubt as to its identity, nor can I think there is any regarding the stated time and place of capture.

There are but few recorded instances of its occurrence in the State, and none of the dates at hand are in winter. Dr. J. M. Wheaton, in "Reports on the Birds of Ohio," says, "Rare visitor. Mr. Oliver Davie of this city [Columbus] has a specimen . . . killed in this vicinity Nov. 2, 1878. The dates of captures [Circleville, summer, 1873; Columbus, November, 1878; near Cincinnati, April, 1880] indicate that it is, at least, a summer resident of the State." It would seem that it is a permanent resident; in all probability rearing its young in central Ohio.

D. S. KELLCOTT.

Ohio State University, Columbus, Feb. 17.

A Magnetic Cane.

CAPT. D. P. SANFORD of this city owns a walking-stick that possesses magnetic properties, but how it came by them he is unable to explain. Several years ago he purchased a strong, heavy cane, having for its central portion a rod of excellent quality of steel, extending throughout its entire length. At the lower end it is about the thickness of the ordinary lead pencil; at the top nearly three-quarters of an inch in diameter. Its outer part is composed of leather, which, having been cut into rings, was forced, one ring upon another, till solid from end to end. This was rounded, smoothed and polished, and varnished. The cane was finished, first, by enclosing the lower end with a steel ferrule through which the central steel rod projected half an inch; second, by covering the upper end of the cane with a circular copper plate over an inch in diameter, and about one-sixteenth of an inch in thickness.

The cane was never near a magnet to its owner's knowledge; but recently he has noticed its magnetic property, which, in his belief, is growing stronger. Now, what causes this?

The water-tight non-conducting covering insulates the rod perfectly, except at the lower end, where, as a matter of course, it constantly comes in contact with the earth. The upper part, covered with the copper plate, is held in the warm and moist hand for hours at a time. Now, will the conditions of insulation, two metals, moisture of earth and hand, and difference in temperature between the two ends, account for the exhibition of magnetic properties? Will some one offer an explanation?

A. H. BEALS.

Milledgeville, Ga., Feb. 20.

[If the writer of the above will take any steel rod and give it a number of raps while held in a more or less vertical position he will find that it will become magnetic.—ED.]

AMONG THE PUBLISHERS.

THE question of "Speed in Locomotives," which for a time has superseded in popular interest the luxuries of railroad travel, will be discussed in the March *Scribner* by a notable group of railway authorities. M. N. Forney, editor of *The Railroad and Engineering Journal*, will consider the question of "The Limitations of Fast Running;" Theodore N. Ely, General Superintendent Motive Power, Pennsylvania Railroad, will treat of "Train Speed as a Question of Transportation;" H. Walter Webb, Third Vice-President of the New York Central, will describe "A Practical Experiment"—the running of the Empire State express. The views of three such authorities, presented in a popular way in one number, give for the first time an adequate knowledge to

the public of the difficulties and risks involved in running through trains at a high rate of speed.

—P. Blakiston, Son, & Co., Philadelphia, have nearly ready a "Monograph on Physical Education," by Frederick Treves, F.R.C.S., printed from the advance sheets of "A Treatise on Hygiene," by various authors. It is a systematic exposition of a very important subject that is at present attracting the attention of school boards, college trustees, physicians, and sanitarians generally.

—To Shakespeare students the plan and scope of Dr. Furness's variorum edition is universally known, as are the infinite pains, judgment, and critical faculty expended in the exposition of each play. Every volume as it appears brings into one focus all the wealth of a great Shakespeare library, so arranged as to be immediately accessible. "The Tempest" is the ninth volume of this incomparable edition, and will soon be published by J. B. Lippincott Company. The plays previously issued are "As You Like It," "Romeo and Juliet," "Hamlet" (2 vols.), "Macbeth," "King Lear," "Othello," and "Merchant of Venice."

—Under the heading "One Hundred Miles an Hour," Mr. Charles N. Deacon of the Reading Railroad discusses, in the March *Lippincott*, the facts and possibilities of railway speed, and rejects the popular notion that a faster rate necessarily means increased danger.

—J. B. Lippincott Company have just published a new edition of "Soule's Synonymes," revised and enlarged by George S. Howison, Mills professor of philosophy in the University of California.

—Houghton, Mifflin, & Co. will publish immediately the lectures in "The Evolution of Christianity," recently delivered at the Lowell Institute, in Boston, by Rev. Dr. Lyman Abbott, which have been carefully revised by Dr. Abbott for this publication in book form; "Equatorial America," in which M. M. Ballou describes his travels to St. Thomas, Martinique, Barbadoes, and the principal capitals of South America. This house will also shortly issue a new work by A. P. Sinnett, whose "Occult World" and "Esoteric Buddhism" secured so wide a reading. The new book will be named "The Rationale of Mesmerism."

—M. L. Holbrook Company, 23 Clinton Place, New York City, announce for immediate publication a work on the hygienic treatment of consumption, which has been in preparation many years, and which would have been published earlier if it had not been detained to await the verdict on Professor Koch's merits. The book is written mainly for the patient.

—In a volume of more than two hundred pages J. B. Lippincott Company will soon publish "Type-Writing and Business Correspondence," by O. R. Palmer. It is a compendium of the entire subject, and places in the hands of the novice just such information as is most needed. To insure its practical efficiency

CALENDAR OF SOCIETIES.

Women's Anthropological Society of America, Washington.

Feb. 20.—Folk-Lork.

Biological Society, Washington.

Feb. 20.—W. H. Dall, Factors in the Distribution of Animal Life as Illustrated by Marine Forms. It is expected that at each meeting a paper of general biological interest will be introduced for discussion, the above being the first of the series. F. A. Lucas, On *Characharodon mortoni*; J. N. Rose, The Flora of the Galapagos Islands; John M. Holzinger, On the Identity of *Asclepias stenophylla*, Gray, and *Acerates articulata*, Engelm.

Appalachian Mountain Club, Boston.

Fed. 25.—Frederick H. Chapin, Ascent of Uncompahgre Peak, Cliff-Dwellings of Navajo Cañon, Colorado (illustrated by about one hundred new stereopticon views.)

Business Department.

Intending investors and others interested in real estate matters in the rapidly developing State of Texas are invited to give a careful reading of the advertisement of the For-Worth and Arlington Heights Land and Investment Company on first page of this number. Mr. E. W. Watkins, 156 Broadway, New York, will show views and maps of the property advertised. The writer can vouch for the entire reliability and truthfulness of any statements made in the advertisement.

Special attention is called to the novel representation of solar and lunar eclipses, with popular lectures on astronomy, recently inaugurated at Carnegie Music Hall, entitled, "A Trip to the Moon."

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A PROFESSORSHIP in Chemistry is wanted by one who has had five years' experience in that capacity. Would prefer to give instruction by lectures and experiments rather than by text-book methods. Would like a position in a college or university where there is a good student's laboratory. Special points of strength claimed are: (1) Thorough control of a class and good order during lectures and recitations. (2) Accuracy in experimenting with chemicals and skill in the manipulation of chemical apparatus. The permission of several distinguished educators has been given to refer to them if required. Would not care to accept a position paying less than \$1,500. Address B. E., care of *Science*, 874 Broadway, New York.

ADDRESS WANTED.—Will some one please send the address of the Secretary of the American Philological Society. Also that of Herbert Spencer. "ADDISON," Room 84, 164 Madison St., Chicago, Ill.

ADDRESSES of Old Book Dealers wanted.—Wishing to obtain a number of old books out of print, I very much desire the addresses or catalogues of rare second-hand book dealers. If there is a directory or list of such dealers I should like to obtain possession of one. W. A. BLAKELY, Chicago, Ill.

WANTED.—Books on the Magic Lantern. Will exchange: "How the Farm Pays," by Cozier and Henderson; "Culture of Farm Crops," by Stewart; "American Agriculturist," 1890 and 1891. I. SLEE ATKINSON, 43 Wallace St., Orange, N. J.

WANTED.—(1) A white man versed in wood and iron working, able to work from specifications and plans, suited for an instructor of boys; his business to have charge of shops of school, outline and direct the work for foremen and students; salary to be \$1,000 per annum (nine months). (2) A man (black preferred) to teach the colored, iron working and forging, subordinate to the preceding; salary, \$720. (3) A man (white) competent to take classes in engineering (assistant's position), but with the ability to perform any of the work required in any of the ordinary engineering courses of our universities; salary from \$1,000 to \$1,500. A. H. BEALS, Milledgeville, Ga.

BOOKS: How to Exchange them for others. Send a postal to the *SCIENCE* exchange column (insertion free), stating briefly what you want to exchange. *SCIENCE*, 874 Broadway, New York.

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To exchange: Experiment Station bulletins and reports for bulletins and reports not in my file. I will send list of what I have for exchange. P. H. ROLFS, Lake City, Florida.

Finished specimens of all colors of Vermont marble for fine fossils or crystals. Will be given only for valuable specimens because of the cost of polishing. GEO. W. PERRY, State Geologist, Rutland, Vt.

For exchange.—Three copies of "American State Papers Bearing on Sunday Legislation," 1891, \$2.50, new and unused, for "The Sabbath," by Harmon Kingsbury, 1840; "The Sabbath," by A. A. Phelps, 1842; "History of the Institution of the Sabbath Day, Its Uses and Abuses," by W. L. Fisher, 1859; "Humorous Phases of the Law," by Irving Browne; or other works amounting to value of books exchanged, on the question of governmental legislation in reference to religion, personal liberty, etc. If preferred, I will sell "American State Papers," and buy other books on the subject. WILLIAM ADDISON BLAKELY, Chicago, Ill.

Wanted, in exchange for the following works, any standard works on Surgery and on Diseases of Children: Wilson's "American Ornithology," 3 vols.; Coues' "Birds of the Northwest" and "Birds of the Colorado Valley," 2 vols.; Minot's "Land and Game Birds of New England"; Samuels' "Our Northern and Eastern Birds"; all the Reports on the Birds of the Pacific R. R. Survey, bound in 2 vols., Morocco; and a complete set of the Reports of the Arkansas Geological Survey. Please give editions and dates in corresponding. R. ELLSWORTH CALL, High School, Des Moines, Iowa.

Wanted to buy or exchange a copy of Holbrook's North American Herpetology, by John Edwards, 5 vols. Philadelphia, 1842. G. BAUR, Clark University, Worcester, Mass.

For sale or exchange, LeConte, "Geology;" Quain, "Anatomy," 2 vols.; Foster, "Physiology," Eng. edition; Shepard, Appleton, Elliott, and Stern, "Chemistry;" Jordan, "Manual of Vertebrates;" "International Scientists' Directory;" Vol. I. *Journal of Morphology*; Balfour, "Embryology," 2 vols.; Leidy, "Rhizopods;" *Science*, 18 vols., unbound. C. T. MCCLINTOCK, Lexington, Ky.

To exchange Wright's "Ice Age in North America" and Le Conte's "Elements of Geology" (Copyright 1882) for "Darwinism," by A. R. Wallace, "Origin of Species," by Darwin, "Descent of Man," by Darwin, "Man's Place in Nature," Huxley, "Mental Evolution in Animals," by Romanes, "Pre-Adamites," by Winchell. No books wanted except latest editions, and books in good condition. C. S. Brown, Jr., Vanderbilt University, Nashville, Tenn.

For Sale or Exchange for books a complete private chemical laboratory outfit. Includes large Becker balance (200g. to 1-romg.), platinum dishes and crucibles, agate motors, glass-blowing apparatus, etc. For sale in part or whole. Also complete file of *Silliman's Journal*, 1862-1885 (62-71 bound); Smithsonian Reports, 1854-1883; U. S. Coast Survey, 1824-1869. Full particulars to enquirers. F. GARDINER, JR., Pomfret, Conn.

the book has been divided into sections giving sample business letters representing widely-different trades, also rules for punctuation and for using the various kinds of type-writing machines.

— Of Dr. Franz Boas's recent publications on the ethnography and linguistics of the American North-west, the following are before us: 1. "Notes on the Chemakum Language," in *American Anthropologist* for January, 1892, pp. 37-44. The people speaking this language were visited by Boas in the summer of 1890 on Puget Sound, and then only three persons were surviving. Before Boas nothing thorough had ever been made public upon this curious and very consonantic language, which forms, together with a dialect on the Pacific Coast, unexplored as yet, a linguistic family by itself. 2. "Third Report on the Indians of British Columbia," contained on pp. 2-43 of Seventh Report on the North-tribes of Canada, Cardiff meeting, 1891, of the British Association for the Advancement of Science; mostly ethnographical and

somatomological. 3. "Vocabularies of the Tlingit, Haida, and Tshimshian Languages," American Philosophical Society of Philadelphia, Oct. 2, 1891; in its Proceedings, pp. 173-208. These copious word collections are so arranged that the English signification stands first. At the end of the article there are texts and a song in Tshimshian with interlinear translation.

— All teachers and those interested in higher education will be attracted by the paper in the *Atlantic Monthly* for March, by Professor George H. Palmer of Harvard University, entitled "Doubts about University Extension." The writer has given this subject a most careful study, and relates the history of the movement in England and in the United States. He speaks of the difficulties of making it a success here, owing to the different social conditions of the two countries, and suggests plans by means of which the system may be made a possible success in America. The paper will well repay a careful reading.

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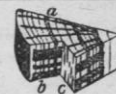
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